

ABSTRACT

A Fresnel lens including comprising a substantially polygonal focusing portion adapted to focus solar radiation to a area having the same geometry as the focusing portion of the lens. Also a solar module including comprising the Fresnel collecting lens and a substantially polygonal photovoltaic cell. The photovoltaic cell is mounted at distance from the Fresnel collecting lens so that the size of the area substantially matches the size of the photovoltaic cell. Also a solar panel having multiple modules within a glazed building envelope system. The solar panel also includes an actuating mechanism within the glazed window envelope system. The actuating mechanism is operatively connected to the plurality of solar modules and is adapted to move the solar modules to track the sun.